

# the Kinesiology of Stretching

In their third column, chiropractor and kinesiology educator Dr. Joe Muscolino and his wife, second-generation Pilates teacher Simona Cipriani, explore various stretching techniques.

By Dr. Joe Muscolino and Simona Cipriani



**Pilates Style: What are the different types of stretching techniques?**

**Dr. Joe Muscolino:** Stretching techniques can involve many different characteristics: A stretch can be static or dynamic, passive or active, solo or assisted. It can involve a technique called pin and stretch or utilize a neurologic reflex.

**PS: What is the difference between static and dynamic stretching?**

**JM:** Classically, stretching is done in a static manner: Once the position of stretch has been reached, it is held for a prolonged period of time, ranging from 10 seconds to a minute or more. Recently, however, more and more people have been advocating what is called dynamic stretching. Dynamic stretches are held for a shorter period of time than static stretches, usually between one and three seconds. Static stretches are performed for three repetitions, while dynamic stretches are performed for approximately ten reps.

**Simona Cipriani:** Dynamic stretching has been a part of Pilates for a very long time. If you look at most Pilates exercises, you

will see that the stretching position is held only for a second or so, and it is repeated between five and ten times. This is true in both mat and apparatus work and with beginner as well as advanced clients.

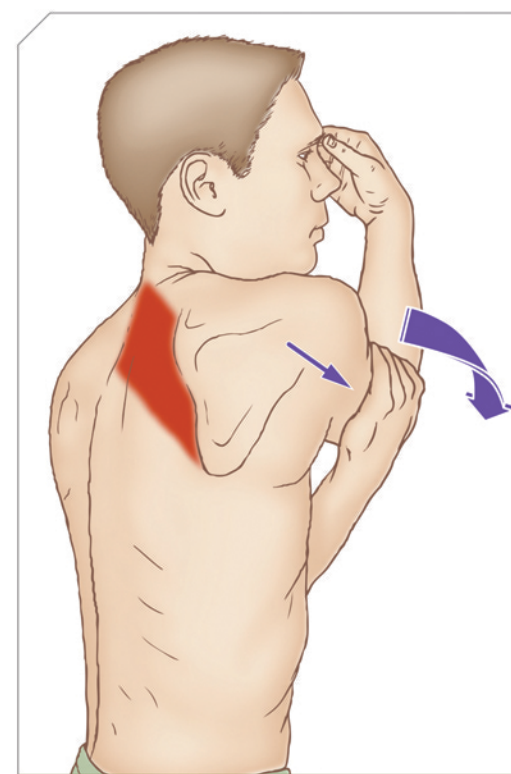
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**PS: What are the advantages of static versus dynamic stretching?**

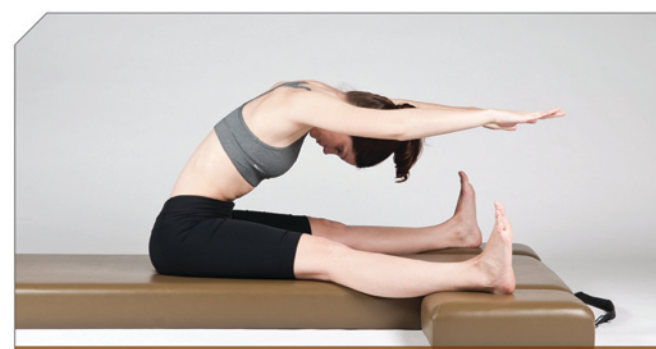
**JM:** The advantage of static stretching is based on the property of soft tissues known as "creep." Creep describes how a soft tissue gradually changes its shape when it is subjected to a force that is applied in a slow and sustained manner. Proponents of static stretching often point to creep as evidence for its effectiveness for increasing flexibility. Dynamic stretching has many advantages over static stretching, including increasing local blood

circulation, feeding the tissues with needed nutrients, lubricating and feeding the joints by promoting movement of synovial joint fluid; because this stretching style involves more movement, it better warms the tissues and

**FIGURE 1.** In this example of a passive stretch, the client uses his other hand to enhance the stretch.



**FIGURE 2A.** Spine-Stretch Forward is an active stretch as it is performed entirely by the client.



**FIGURE 2B.** When the client is assisted when doing Spine-Stretch Forward, it can be a much more effective move.



facilitates healthy neural control by reinforcing nervous system pathways for motion.

**SC:** Almost every Pilates exercise involves dynamic stretching. For example, with Rollover, the client brings the legs over the head until the feet touch the floor; the position is held for a few seconds, creating a dynamic stretch for the backs of the legs and the entire spine.

**PS: What are the differences between active and passive stretching and solo and assisted stretching?**

**JM:** As a general rule, a stretch done solo by the client is active; when a Pilates teacher assists the client, the stretch is passive. But there are exceptions to these rules. A client can perform a solo stretch passively by using one part of his body to stretch another. For example, if he uses his right hand to stretch his left shoulder joint, it is technically a passive stretch because the muscles of the left shoulder joint are relaxed as the joint is being stretched (see Figure 1).

into the stretch, the antagonist muscles on the other side of the joint are neurologically inhibited, in other words relaxed by the reflex known as reciprocal inhibition. This allows for a fuller, deeper stretch than would have otherwise occurred.

**PS: Is active or passive stretching more common in Pilates?**

**SC:** Passive stretching is not common in the world of Pilates; it is more likely to be done by a massage therapist, physical therapist or chiropractic physician. Active stretching is more common in Pilates. For example, when performing Spine-Stretch Forward on the mat, we actively contract the anterior abdominal wall to flex the spine. By emphasizing the contraction of the anterior abdominal wall, not only is it strengthened, but also the stretch of the muscles in back is deepened (see Figure 2A).

**PS: Is assisted stretching ever a part of Pilates?**

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